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**REMARKS**

Reconsideration of the application in view of the present amendment is respectfully requested.

Claims 13-50 are canceled. New claims 51-64 are added. Accordingly, claims 51-64 are pending.

**Examiner's objections to the specification**

The examiner correctly pointed out that NaO was used in the specification (at page 6 lines 8 and 10, and page 7 line 16) by mistake. This has now been corrected to Na<sub>2</sub>O.

The title has also been changed to more clearly correspond with the claimed subject matter.

The applicant has also changed a typographical error in the paragraph beginning at page 7, line 14, where a box was used instead of the symbol for a micron. The error and the required correction are clear from the corresponding passage in the priority document (page 12 line 7).

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**Claim rejections under §112**

Applicant notes that the examiner rejected claims 13-50 based on §112. However, in view of the cancellation of these claims, these rejections are now moot.

**Claim rejections under 35 USC §101**

Similarly, in view of the cancellation of claims 13-50, examiner's rejections under 35 USC §101 are now moot.

**Claim rejections under 35 USC §102**

In view of the cancellation of claims 13-50, examiner's rejections under 35 USC §102(e) based on Dejneka et al (US2004/0171076) (referred to herein as "Dejneka II") are now moot. However, to advance prosecution, the applicant would like to make the following comments. Dejneka et al. is a continuation-in-part of application no. 10/027,286, which is published as US 2003/0119207 (referred to herein as "Dejneka I"),

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a copy of which is enclosed for the examiner's convenience. This continuation-in-part was filed on Feb 26, 2004. The present application was filed on April 12, 2004, but claims priority from an almost identical UK application filed on June 26, 2003. Thus, it is clear that any information contained in Dejneka II but not contained in Dejneka I cannot pre-date the date of invention by the applicant, as required by 35 USC 102(e). In other words, only the contents of Dejneka I can be cited against the present application under 102(e).

On reviewing Dejneka I, applicant is unable to locate a number of features recited in claims 51-64. For example, all of the independent claims recite "an optically detectable security feature". Applicant could find no disclosure in Dejneka I of security features. Rather, Dejneka I appears to be concerned with detectable labels, particularly for biological and chemical assays (see paragraph 0002 first sentence). Another example is that applicant could find no disclosure in Dejneka I of a security profile comprising (i) a ratio of emission intensities at a plurality of pre-determined wavelengths, and (ii) different emission lifetimes at the plurality of pre-determined wavelengths, as recited in claims 51-59, and 64.

The subject matter of independent claim 60 includes "selecting weight percentages of the network modifier oxides", where altering the weight percentages alters the energy levels of the doped glass. Independent claim 63 recites "selecting weight percentages of the network modifier oxides to create desired energy levels in the block, where the desired energy levels include a transition forbidden when the rare earth ion is in solution". Applicant could find no disclosure in Dejneka I of any of these features.

Accordingly, the subject matters of claims 51-64 are patentably distinct from Dejneka I. Therefore, withdrawal of reliance on Dejneka I as anticipating or rendering obvious any of the pending claims is respectfully requested.

#### Claim rejections under 35 USC §103 - Jones

The preceding discussion of Dejneka I and Dejneka II apply equally to the rejection under 35 USC §103(a). Only Dejneka I can be applied against the present application.

With respect to Jones et al (hereinafter referred to as "Jones"), the Office Action

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states that Jones discloses “doping a glass or plastic substrate (carrier) with luminescent compositions, such as rare earth chelates [0043], [0049]”. Applicant acknowledges that the word “doping” is used by Jones; however, this word is used by Jones in an entirely different context, and with a different meaning, to how it is used in the present claims.

In the present claims, the word doping is used in the sense of being incorporated within a carrier so that the dopant interacts with the carrier to create modified energy levels. This is brought out clearly by independent claims (numbers 51, 55, 58, 59, and 64) which all recite a limitation similar to the following:

“a glass or plastic particle incorporating the at least one rare earth dopant, where interaction between the particle and the at least one rare earth dopant is such that the intrinsic set of energy levels is modified to provide a new electronic energy level profile that allows transitions different to those allowed by either the rare earth dopant by itself or the undoped glass or plastic particle” [emphasis added].

In contrast, in Jones, the word “doped” appears to be synonymous with the words marked, labeled, or tagged, as will be shown below with reference to specific passages in Jones. It is worth noting that Jones uses many terms interchangeably, as stated in paragraph [0026], “These tags are otherwise referred to as dyes, pigments, inks, marks, or labels elsewhere in this application”.

Paragraph [0043] states that “other types of materials that can be usefully doped or tagged include sprays, adhesives, or films and coatings.” It is clear that this has in view the spray, adhesive, film, or coating being used as a medium to hold the pigment or tag. In this sentence, the word “doped” appears to be used as a synonym for the word “tagged”. Applicant could not find any disclosure in Jones of interaction between any of these media and the pigment or dye tagged by the media. Furthermore, it is clear that none of these media is a glass or plastic particle, as required by the pending independent claims. Therefore, Jones does not disclose a structure similar to that recited in the pending claims.

Applicant also disagrees with the statement at page 13 of the Office Action: “since Jones describes a structure similar to that of the applicant (glass doped with a rare earth dopant), the properties they exhibit are deemed similar to that of the applicant”.

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Applicant has shown that transitions that are forbidden in an aqueous solution are allowed in, *inter alia*, a borosilicate doped glass (see Figs 2 and 3 of the application for 415nm excitation). Applicant has also explained in the application (page 7 last paragraph to page 8 first paragraph) that "Altering the weight percentage of the network modifier oxides within the glass matrix will change these [final rare earth doped glass energy] levels and hence change the observed peak fingerprint. Hence, to observe the correct fingerprint, the glass composition has to be known." Applicant cannot find any suggestion of such behavior in any of the cited art, and therefore believes that the statement in the Office Action at page 13 should be withdrawn.

Therefore, withdrawal of reliance on Jones as rendering obvious any of the pending claims is respectfully requested.

Claim rejections under 35 USC §103 - Huston

At the outset, applicant would like to point out that Huston et al (referred to herein as "Huston") relates to an optically stimulable glass. As defined in Huston at col. 1 lines 60 to 66 an optically stimulable glass stores radiation as trapped charges until the glass is stimulated with a suitable light source, at which point the trapped charges are released and photons are emitted. ~~These trapped charges are stable for days, months, or years (col. 2 lines 44 and 45).~~ It is a stated object of Huston to provide a material that undergoes optically stimulated luminescence (col. 2 lines 57 to 59).

In contrast, the present application does not relate to optically stimulable glasses or optically stimulable fluorescence.

Claims 51-59 and 64 all recite a security profile including a ratio of emission intensities at a plurality of pre-determined wavelengths. The security profile is provided by a single particle of glass or plastic doped with one or more rare earth ions, so that a single particle gives rise to a plurality of pre-determined wavelengths. Applicant can find no disclosure in Huston of this feature.

Applicant has shown that transitions that are forbidden in an aqueous solution are allowed in a borosilicate doped glass (see Figs 2 and 3 of the application for 415nm excitation). Applicant has also explained in the application (page 7 last paragraph to page 8 first paragraph) that "Altering the weight percentage of the network modifier oxides

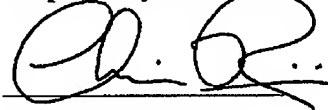
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within the glass matrix will change these [final rare earth doped glass energy] levels and hence change the observed peak fingerprint. Hence, to observe the correct fingerprint, the glass composition has to be known." Applicant cannot find any suggestion of such behavior in Huston. Therefore, claims 60-63 recite patentable subject matter.

Therefore, withdrawal of reliance on Huston as rendering obvious any of the pending claims is respectfully requested.

In view of the foregoing, it is submitted that the application is in condition for allowance, and allowance of the application is respectfully requested.

Respectfully submitted,



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